

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) Mobile antenna system comprising ~~rotary part by azimuth, which is an electronically steered in elevation phased array antenna, comprising:~~
a plurality of (multi)layered structures, placed at certain levels, said structures includeing
microstrip antenna elements (12), and feeding lines (20), which properlyfor combineing and
guideing a received signal the electromagnetic energy, forming the necessary phase and
amplitude distribution over the antenna elements, a plurality of electronic modules (28)
providing amplification, phase change, frequency conversionconfigured to amplify, phase
modify, frequency convert and steeringroute of the received signal, power supply and control
circuits for the same electronic modules;
a plurality of vertical transitions (13), providing theconfigured to passing of the
electromagnetic energy between the layered structures from different levels;
frequency converting device and rotary joint (18), including a rotatable part and a static part
for passing the received signal, the power supply and control circuits to the static partand
rotating at least a portion of the mobile antenna system;
sensors detecting the spatial movement of the system, and power supply and control units;
static part, comprising bottom (10), cover (2) with radiotransparent part (1), mechanical
supports, motor (11), gear, plurality of electronic modules (19,6,7);
2. (Currently Amended) Mobile antenna system according to claim 1, ~~featuring~~ including a
first layered structure (3), forming the first level, which comprises the microstrip antenna
elements (12).
3. (Currently Amended) Mobile antenna system according to claim 2, ~~characterized~~

byincluding microstrip antenna elements ~~(12)~~ placed in a cavity ~~(21)~~.

4. (Currently Amended) Mobile antenna system according to claim ~~1, 2 or 3~~, characterized byincluding microstrip antenna elements which are dual-port.

5. (Currently Amended) Mobile antenna system according to ~~one of claims 1 to 4~~, characterized byincluding microstrip antenna elements ~~(12)~~ which are probe fed ~~(22)~~.

6. (Currently Amended) Mobile antenna system according to claim 5, characterized byincluding microstrip antenna elements ~~(12)~~, which are capacitive probe fed ~~(22, 27)~~.

7. (Currently Amended) Mobile antenna system according to ~~one of claims from 1 to 4~~, characterized byincluding microstrip antenna elements ~~(12)~~ fed through a slot ~~(26)~~.

8. (Currently Amended) Mobile antenna system according to claim 1, characterized byincluding microstrip antenna elements ~~(12)~~ which are tilted to thean observation angle.

9. (Currently Amended) Mobile antenna system according to claim 1, characterized byincluding microstrip antenna elements ~~(12)~~ covered with dielectric layer, which ~~could~~can act as impedance matching for low elevation tracking.

10. (Currently Amended) Mobile antenna system according to claim 9, characterized byincluding a dielectric layer carrying the antenna elements ~~(12)~~.

11. (Currently Amended) Mobile antenna system according to claim 1, characterized ~~by~~including microstrip antenna elements ~~(12)~~ placed in a lattice formed from the peaks of isosceles triangles ~~(29)~~.
12. (Currently Amended) Mobile antenna system according to claim 1, characterized ~~by~~including controls for electronic tracking ~~which is in one plane perpendicular to the rows (30) formed by one of the sides of the triangles (29), which form the~~forming a lattice.
13. (Currently Amended) Mobile antenna system according to claim 12, characterized ~~by~~including antenna elements placed in the rows, perpendicular to ~~the~~an electronic tracking plane, ~~which (elements) are placed at about an~~ optimal distance regarding the effective utilization of ~~the~~an antenna aperture and feeding lines density ~~(20)~~.
14. (Currently Amended) Mobile antenna system according to claim 1, characterized ~~by~~including microstrip antenna elements ~~(12) which are placed apart at certain places of the array in order to place in conjunction with~~ mechanical supports ~~(14) there~~.
15. (Currently Amended) Mobile antenna system according to claim 1, characterized ~~by~~including a first layered structure ~~(3) comprising~~having feeding lines ~~(20), which feed for~~ sequentially feeding several antenna elements ~~(12) each from one and the same row~~.
16. (Currently Amended) Mobile antenna system according to claim 1, characterized ~~by~~including a first layered structure ~~(3) containing~~ feeding lines ~~(20), which feeding in~~ sequence and in parallel several antenna elements ~~(12) each from one and the same row~~.

17. (Currently Amended) Mobile antenna system according to claim 1, ~~characterized~~
~~by including~~ a first layered structure (3) comprising feeding lines (20), which feed in sequence
and in parallel several antenna elements (12) from neighbouring rows providing about a
constant phase difference between them.

18. (Currently Amended) Mobile antenna system according to claim 1, ~~characterized~~
~~by including~~ levels which are formed by more than one similar-layered structures (3, 15), so as
to form a plurality of united leveled modules (25), ~~which are united from the lower levels.~~

19. (Currently Amended) Mobile antenna system according to claim 18, ~~characterized~~
~~by including~~ leveled modules, ~~which could be tilted~~ may be tiltable to the direction of
observation.

20. (Currently Amended) Mobile antenna system according to claim 1, ~~characterized~~
~~by including~~ a first layered structure (3) which is formed by vertically placed layers (31).

21. (Currently Amended) Mobile antenna system according to claim 1, ~~characterized~~
~~by including~~ a first layered structure (3), ~~which contains~~ having a low noise amplifiers (28).

22. (Currently Amended) Mobile antenna system according to claim 21, ~~characterized~~
~~by including~~ next layered structures (15, 5) ~~which contain~~ having feeding-lines (20),
combining ~~the~~ groups from ~~the~~ a first level and from ~~one and~~ the same row in parallel.

23. (Currently Amended) Mobile antenna system according to claim 22, ~~characterized by~~wherein the next layered structures (15, 5) also containing amplifiers ~~(28)~~.

24. (Currently Amended) Mobile antenna system according to claim 23, ~~characterized by~~last including a final layered structure ~~(5)~~ containing phase control devices.

25. (Currently Amended) Mobile antenna system according to claim 24, ~~characterized by~~last including final layered structure ~~(5) which also contains~~having amplitude control devices.

26. (Currently Amended) Mobile antenna system according to claim 24, ~~characterized by~~phase control devices which are~~having~~ integrated circuits configured as phase control devices.

27. (Currently Amended) Mobile antenna system according to claim 24, ~~characterized by~~phase control devices which are build fromincluding discrete components configured as phase control devices.

28. (Currently Amended) Mobile antenna system according to claim 1, ~~characterized by~~last including a final layered structure ~~(5) that contains~~containing feed lines ~~(20)~~, forming circuit, ~~which combines parts from the~~combining different rows.

29. (Currently Amended) Mobile antenna system according to claim 24~~1~~, ~~characterized by~~last having a final layered structure ~~(5)~~ which contains plurality of digital control units for ~~steering of~~controlling amplitude ~~(28)~~ and phase control units.

30. (Currently Amended) Mobile antenna system according to claim 1, ~~characterized by~~having feed lines (20) in the layered structures (3,5,15) ~~which are in fact~~ formed from microstrip lines.

31. (Currently Amended) Mobile antenna system according to claim 1, ~~characterized by~~ parthaving a portion of the feed lines (20) in the layered structures (3,5,15) ~~which are~~ formed from strip lines.

32. (Currently Amended) Mobile antenna system according to claim 1, ~~of which it is~~ characterie that having at least some of the layered structures (3,5,15) ~~are being~~ multilayer printed circuit boards.

33. (Currently Amended) Mobile antenna system according to claim 1, ~~of which it is~~ characterie that having at least some of the layered structures (3,5,15) ~~are fulfilled as~~ equalbeing modules containing one or more levels, ~~united~~ coupled from the next level of layered structure.

34. (Currently Amended) Mobile antenna system according to claim 1, ~~characterized by~~ theincluding a connection between the feed lines (20) from the separated levels (3, 5, 15) ~~is~~ provided by a plurality of vertical RF transitions ~~(13)~~.

35. (Currently Amended) Mobile antenna system according to claim 34, ~~characterized by~~ including vertical RF transitions (13) which are surface mount coaxial elements, ~~capable of~~

~~surface mounting.~~

36. (Currently Amended) Mobile antenna system according to claim 34, ~~characterized by including~~ vertical RF transitions (13) ~~which are~~ formed from surface mount stripline elements, ~~capable of surface mounting.~~

37. (Currently Amended) Mobile antenna system according to claim 34, ~~35 or 36,~~ characterized by having vertical RF transitions (13) ~~which have~~ which also form supporting mechanical ~~functions~~ structures.

38. (Currently Amended) Mobile antenna system according to claim 1, ~~of which it is~~ characteristic that having one side of the layered structures (5, 15) ~~is covered with~~ electromagnetic absorptive a coating configured to absorb electromagnetic energy.

39. (Currently Amended) Mobile antenna system according to claim 1, ~~of which it is~~ characteristic that ~~the~~ having RF outputs from the layered structure (5) ~~of the last level are~~ connected through coaxial cables to a separate combiner.

40. (Currently Amended) Mobile antenna system according to claim 39, ~~of which it is~~ characteristic that ~~the output of the said~~ wherein the combiner is connected with the input of ~~the~~ a frequency converter.

41. (Currently Amended) Mobile antenna system according to claim 1, ~~characterized by~~ ~~leveled structure covered with cover (16), which cover is an electromagnetic shield~~ having an

electromagnetic shield covering portions of the layered structures.

42. (Currently Amended) Mobile antenna system according to claim 41, ~~of which it is characterized by that the cover (16)~~where the electromagnetic shield has an electromagnetic absorptive coating ~~from~~on the inner side.

43. (Currently Amended) Mobile antenna system according to claim 41 ~~and 42, of which it is characterized by that the cover (16) has supporting and~~wherein electromagnetic shield is structurally configured to perform carrying functions.

44. (Currently Amended) Mobile antenna system according to claim 41, ~~of which it is characterized by that~~wherein the cover (16) is mounted to the static part through rotary joint (18).

45. (Currently Amended) Mobile antenna system according to claim 41, ~~of which it is characterized by that the cover (16) comprises mounted from beneath gear (9), passing the~~wherein the electromagnetic shield rotated with movement from the ~~a~~a motor ~~(11)~~.

46. (Currently Amended) Mobile antenna system according to claim 45, ~~of which it is characterized by that the said~~wherein the electromagnetic shield rotates in response to movement of a gear (9) is made as crown, aroundconfigured at the periphery of the cover (16) of the rotary partelectromagnetic shield.

47. (Currently Amended) Mobile antenna system according to claim 1, ~~of which it is~~

~~characterized by that the driving is provided from~~wherein rotation is provided using a belt gear~~(8).~~

48. (Currently Amended) Mobile antenna system according to claim 41, ~~of which it is~~
~~characteristic that the cover (2)~~including a cover of the antenna system having a
radiotransparent part (1).

49. (Currently Amended) Mobile antenna system according to claim 48, ~~of which it is~~
~~characterized by that~~wherein the radiotransparent part ~~(1)~~ has impedance matching
properties for lower elevation tracking.

50. (Currently Amended) Mobile antenna system according to claim 1, ~~of which it is~~
~~characterized by that the system has~~having a satellite signals reading and recognition unit
~~(19).~~